possible to suggest that there will not be any demand for hydrogen cars. On the other hand, hydrogen engines may be used in portable power generators instead of petrol ones. Such replacement can slightly reduce their mass and sizes without any loss in efficiency. Besides, hydrogen power generators are also eco-friendly, noiseless and are able to generate thermal energy as well.

To sum up, hydrogen engines is the quite worthy technology that can stand in a row with combustion and electric engines, but the technology entails considerable expense and problems with infrastructure and safety. Even if this technology will not be used in cars, it could be a good alternative to petrol or diesel power generators or may be even used for power plants.

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ADVANTAGES AND DISADVANTAGES OF WIND POWER PLANTS

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Environmental preservation is one of the most important issues for modern society. This is why most companies that specialize in generating electricity switch to sustainable and environmentally friendly power plants, among which the most popular are wind power plants. Wind power plants have significant advantages over the solar panels and power plants, which operate on natural gas [1].

1. The most obvious advantage is complete autonomy of the station and its independence from the centralized networks. There is no need to monitor or supervise their operation.

2. The plants are environmentally friendly because wind is a renewable resource and its treatment does not cause harmful emissions into the atmosphere, land and wastewater as produced by oil, whose emissions produce nitrogen oxides and carbon dioxide, which are hazardous not only for the environment but also for people.

3. Power batteries take up little space, so they are more convenient than solar batteries, which take up a large amount of territory. They can be placed both on dryland and offshore where the speed of wind is much higher.

4. Low water consumption for power generation is a very important advantage. Because of this, wind turbines can preserve the global supply of fresh water, which became an important issue worldwide and is one of the Sustainable Development Goals listed in The 2030 Agenda for Sustainable Development, adopted in 2015.

5. Wind stations are long-lasting. They will be in operation for years due to an insignificant amount of wear and tear of the mechanics and structural elements.

6. Another important reason is providing excellent employment opportunities for the area's population [2].

However, wind power plants also have a number of disadvantages, listed below [3].

1. Their operation depends on weather conditions. Wind is an inexhaustible resource, and wind power plants are able to generate electricity around the clock. However, in some cases there is not

enough wind speed for the station's stable operation and production of additional energy.

2. Wind turbines produce great noise "baffles" and vibrations, the animals and people living near the stations or working at the stations can be harmed.

3. Also, due to the great velocity of turning of the station's blades it can cause damage to birds, although such accidents are not common.

4. The cost is high and so is the length of time it takes to pay it off.

In conclusion, many of the described problems can be solved in the process of technology development. According to the International Renewable Energy Agency, despite all the cons, at the end of 2017 the capacity of wind farms was over 18.7 GW. This is almost half of the total capacity of Ukraine's energy facilities. So, the advantages of WPP definitely outweigh the disadvantages.

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A PROGRAM FOR DETECTING GEOMETRIC CHERRIES BASED ON THE ANALYSIS OF THEIR IMAGES

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Computer vision technology can rightfully be considered one of the most advanced and promising at this stage in the development of global digital computer technologies.

Computer vision (machine vision) [1] is a direction in the field of artificial intelligence, which includes algorithms for detecting, tracking and classifying objects by their images.

As examples of problems [2], in the solution of which computer vision is used, one can specify tracking and security systems, product quality control systems, recognition of objects and text documents, image search based on content, medical diagnostics, robotics, and others. Although the quality of solving the assigned tasks is incomparable with a human, but even this level is a significant progress in modern IT technologies.

Today, the number of areas in which computer vision is used is increasing every year. The agro-technological sphere has also been added to these spheres. For example, the use of computer vision technologies to calculate various geometric characteristics of certain objects by analyzing their images. Seeds, leaves, and also fruits of various plants (in particular, cherry fruits) can be used as such objects of research.

This work is devoted to the determination of the sweet cherry fruit in the photograph, and the calculation of its geometric characteristics based on the analysis of the data obtained.

As a library that implements all the functions necessary for the task, the OpenCV library was chosen - an open source computer vision library that allows both to identify objects in a photo and to determine various parameters of a specific object.